Bansilal Ramnath Agarwal Charitable Trust's

Vishwakarma Institute of Information Technology, Pune-48

(An Autonomous Institute affiliated to Savitribai Phule Pune University)

PROJECT REPORT ON

AutoQGen-Automatic Question Paper Generator

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(ARTIFICIAL INTELLIGENCE)

Submitted by:

Sr No.	Name	Email Id
1	Komal Jadhav	komal.22320089 @viit.ac.in
2	Komal Patankar	komal.22210480@viit.ac.in
3	Rutuja Sonwane	rutuja.22210341@viit.ac.in

Under Guidance of

Dr. Anuradha Yenkikar , Prof. Pradnya Mehta, Prof. Pranjal Pandit

TABLE OF CONTENTS

Table of Contents

1. ABSTRACT

The goal of the Automatic Question Paper Generator is to streamline the current manual system using computerized tools and comprehensive software, meeting the users' needs. This enables the secure storage and easy retrieval and manipulation of their valuable data/information for an extended period. Both the necessary software and hardware are readily accessible and user-friendly. This project presents the development of an automatic question paper generator web application using HTML, CSS, and JavaScript. The aim is to provide educators with a user-friendly tool to streamline the process of generating customized question papers tailored to specific educational requirements. Leveraging web technologies, the application offers a seamless interface for educators to input parameters such as topic, difficulty level, and question type, facilitating the automated generation of question papers. The responsive design ensures accessibility across devices, enhancing usability for educators in diverse educational settings. By automating the traditionally labour-intensive task of question paper creation, the web application aims to improve the efficiency of educators while maintaining the quality and relevance of assessments. Future enhancements may include features such as question bank management and integration with learning management systems to further enhance the utility and versatility of the application in educational contexts.

2. INTRODUCTION

The Automatic Question Paper Generator has been developed to address the challenges inherent in manual question paper creation systems. This software aims to alleviate, and in many cases, eliminate the difficulties faced by educators and institutions in managing this process. Tailored specifically to the needs of educational entities, this application streamlines operations to ensure smooth and effective management of assessment materials.

In the realm of education, the preparation of assessment materials, particularly question papers, is a task that demands meticulous attention to detail and consumes significant time and effort from educators. Traditional methods of crafting question papers involve manual selection and arrangement of questions, which can be both time-consuming and prone to biases.

To address these challenges, we propose the development of an Automatic Question Paper Generator (AUTOQGEN) web application. This project aims to revolutionize the process of question paper creation by leveraging technology to automate the generation of tailored assessment materials.

The primary purpose of the AUTOQGEN web application is to provide educators with a user-friendly platform that streamlines the process of question paper creation. By automating the selection and arrangement of questions from a predefined question bank, the application aims to save educators time and effort while ensuring the integrity and diversity of assessment materials.

3. OBJECTIVES

The main objective of the Project on Automatic Question Paper Generator is to manage the details of Branch, Course, Difficult Level, Question and faculty. It manages all the information about Branch, Subject, Semester and faculty. The project is totally built at administrative end as well as faculty, thus only the admin/hod and faculty is guaranteed the access. The project's goal is to develop a software application that streamlines the management of Branch, Course, Subject, and Difficulty Level tasks to minimize manual work. It tracks all the details about the Difficult Level, Question, subjects.

Key Features:

- User registration and authentication.
- Course and subject management.
- Question bank creation and management.
- Question paper generation with customizable criteria.
- Real-time collaboration and updates.
- Security measures to protect sensitive data.

4. PROBLEM STATEMENT

In educational institutions, the process of creating question papers for assessments can be time-consuming and tedious. Faculty members often spend a significant amount of time selecting and organizing questions, which could be better utilized for other academic activities. Additionally, ensuring the fairness and quality of question papers while maintaining a diverse range of questions poses a challenge.

Furthermore, administrative tasks such as managing faculty details, course subjects, and question banks can become overwhelming without a streamlined system in place. This can lead to inefficiencies, inconsistencies, and errors in the assessment process.

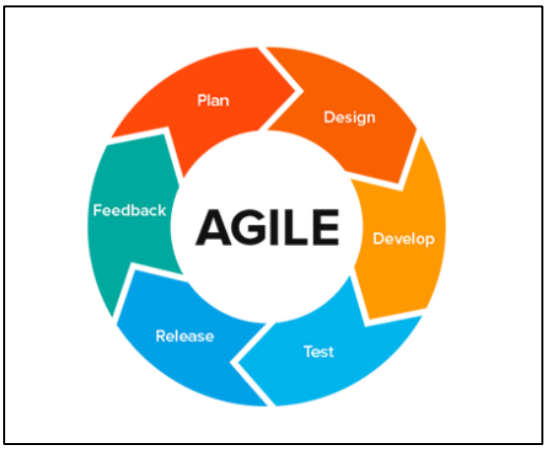
To address these challenges, there is a need for an efficient and user-friendly system that automates the process of generating question papers while providing tools for managing faculty, subjects, and questions effectively. Such a system would not only save time and effort for faculty members but also ensure the integrity and quality of assessments.

Therefore, the project aims to develop an Automatic Question Paper Generator (AUTOQGEN) web application that simplifies the creation of customized question papers for educational assessments. The system will provide functionalities for faculty members to manage course subjects, add questions, and generate question papers based on specified criteria. Additionally, administrators will be able to manage faculty details and oversee the overall operation of the system.

By addressing these challenges and providing a comprehensive solution, the AUTOQGEN system will enhance the efficiency, fairness, and quality of the assessment process in educational institutions.

5. PROPOSED METHODOLOGY FOR SOLVING PROBLEM

The development of the Automatic Question Paper Generator (AUTOQGEN) follows an iterative and collaborative approach, blending elements of Agile and Waterfall methodologies to ensure efficient progress while maintaining a focus on quality and user satisfaction.



Approach:

- **Requirements Gathering**:

The project commenced with comprehensive requirements gathering sessions involving stakeholders, including educators, administrators, and IT professionals. This ensured a clear understanding of user needs and expectations.

- **Design Phase:**

Following requirements analysis, the design phase commenced, focusing on the conceptualization and visualization of the AUTOQGEN's features and functionalities. This involved creating wireframes, user interface designs, and database schemas.

- **Development Iterations:**

Development proceeded in iterative cycles, with each cycle focusing on implementing specific features or components of the AUTOQGEN. Agile principles such as continuous integration and frequent feedback loops were embraced to facilitate flexibility and responsiveness to evolving requirements.

- **Testing and Quality Assurance:**

Rigorous testing procedures were employed throughout the development process to ensure the reliability, functionality, and usability of the AUTOQGEN. This included unit testing, integration testing, user acceptance testing, and performance testing.

- **Deployment and Feedback:**

Upon completion of development and testing, the AUTOQGEN was deployed to a staging environment for final validation and feedback from stakeholders. Adjustments and refinements were made based on user feedback before final deployment to production.

6. SYSTEM SPECIFICATION

- **HARDWARE REQUIREMENTS**

1. The Software is developed in the system having following configuration.
2. Processor: 11th Gen Intel® Core™ i5-1135G7 @ 2.40GHz
3. 2.42GHz Ram: 8G
4. Solid State Drive : 512GB

- **SOFTWARE REQUIREMENTS**

1. Front End: HTML, CSS, JavaScript,
2. PHP Back End: My SQL.
3. Operating System: Windows
4. Software: XAMPP Server.

7. RESOURCES REQUIRED

Languages Used:

1. HTML5

HTML5 is a mark-up language used for structure and presenting contents for the World Wide Web and a core technology of the Internet. It is the fifth revision of the HTML standard (created in 1990 and standardized as HTML 4 as of 1997). Its core aims have been to improve the language with support for the latest multimedia while keeping it easily readable by humans and consistently understood by computers and devices (web browser, parsers etc…) HTML5 is intended to subsume not only HTML 4, but also XHTML1 and DOM level 2 HTML, HTML5 is also cross-platform. It is designed to work whether you are using a PC, or a Tablet, a Smartphone, or a TV.

2. CSS

Cascading Style Sheet (CSS) is a style sheet language used for describing the look and formatting of a document written in a mark-up language. While lost often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG, and CSS is a cornerstone specification of the web and almost all web pages use CSS style sheet to describe their presentation.

3. JavaScript

JavaScript (JS) is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It is also being used in server-side programming, game development and the creation of desktop and mobile applications.

4. MYSQL

MySQL is an open-source relational database management system. It is based on the Structured Query Language (SQL). Which is used for adding, removing and modifying information in the

database. Standard SQL commands, such as ADD, DROP, INSERT and UPDATE can be used with MySQL. MySQL can be used for a variety of applications, but is most commonly found on the webservers. A website that uses MySQL may include web pages that access information from a database.

5. PHP

PHP is a server-side scripting language designed for web development but also used websites and 2.1 million web servers. Originally created by Rasmus Lerdorf in 1995, the reference implementation of PHP is now produced by the PHP Group. While PHP originally stood for Personal Home Page, it now stands for PHP: Hypertext Pre-processor, a recursive acronym. PHP code is interpreted by a web server with a PHP processor module which generates the resulting web page. PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data.

Other tools:

1. Visual studio

Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop computer programs including websites, web apps, web services and mobile apps. Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, Windows Presentation Foundation, Windows Store and Microsoft Silverlight. It can produce both native code and managed code. he most basic edition of Visual Studio, the Community edition, is available free of charge. The slogan for Visual Studio Community edition is "Free, fully-featured IDE for students, open-source and individual developers".

2. Xampp server

XAMPP is a free and open-source cross-platform web server solution stack

package developed by Apache Friends, consisting mainly of the Apache HTTP

Server, Maria DB database, and interpreters for scripts written in the PHP and Perl

programming languages.

8. SYSTEM STUDY

EXISTING SYSTEM

Exiting system is a difficult process to prepare the question paper and analysis the data in the textbook.

DRAWBACKS

- It is a human process.
- In this process repetition in paper may occur.
- Less Security.
- It is a slow process.
- It has less varieties of questions.

PROPOSED SYSTEM

The proposed system, an Automatic Question Paper Generator (AUTOQGEN), is a web-based application designed to revolutionize the process of creating customized question papers for educational assessments. By leveraging advanced technologies and intuitive design principles, the AUTOQGEN aims to streamline and enhance the efficiency of question paper creation while ensuring the integrity and quality of assessment materials.

CHARACTERISTICS OF THE PROPOSED SYSTEM

The Automatic Question Paper Generator System is developed Html, CSS, Php and My SQL. In a fully functional system, there is a repository of syllabus, subjects, and questions It takes a simple text as an input and provides a list of questions as an output

Features:

- It is an automated process.
- It is a random as well as unbiased process.
- Higher security.
- It is a faster process.

MODULE DESCRIPTION:

1. **User Authentication and Authorization:**

This module handles user authentication, allowing users to securely log in to the system. It also implements role-based access control, ensuring that users have appropriate permissions to access different features and functionalities of the AUTOQGEN.

2. **Question Bank Management:**

The Question Bank Management module provides functionality for managing the repository of questions. Users can add, edit, categorize, and tag questions, making it easier to retrieve and use them in question paper generation.

3. **Customization Options:**

This module allows users to customize the parameters for generating question papers. Users can specify subjects, topics, difficulty levels, and the number of questions, tailoring the assessments to their specific requirements.

4. **Dynamic Question Paper Generation:**

The Dynamic Question Paper Generation module generates question papers dynamically or randomly based on the user-defined parameters. It selects questions from the question bank and arranges them into a structured format for the question paper.

5. **Preview and Editing:**

The Preview and Editing module enables users to preview generated question papers before finalizing them. Users can make edits or adjustments as needed, ensuring the accuracy and quality of the assessments.

6. **Exporting and Printing:**

This module provides options for exporting generated question papers in various formats such as PDF, Word, or HTML. It also supports printing capabilities for offline use, allowing users to distribute question papers as needed.

7. **User-Friendly Interface:**

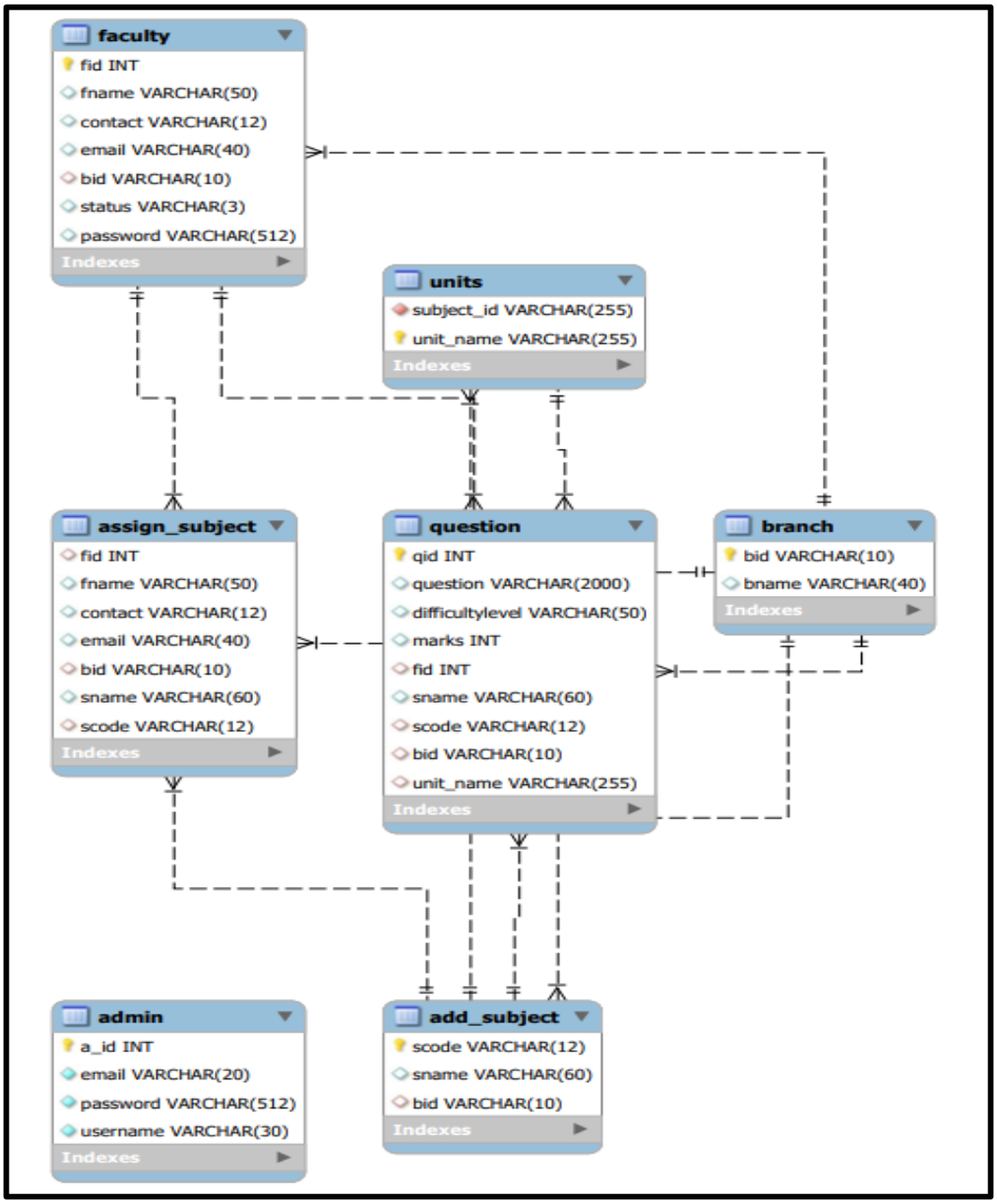
The User-Friendly Interface module focuses on designing an intuitive and responsive user interface for the AUTOQGEN. It ensures that users, including educators with limited technical expertise, can easily navigate and utilize the system.

8. **Security and Data Privacy:**

The Security and Data Privacy module implements robust security measures to protect sensitive user data and assessment materials. It ensures the confidentiality and integrity of the information stored in the system.

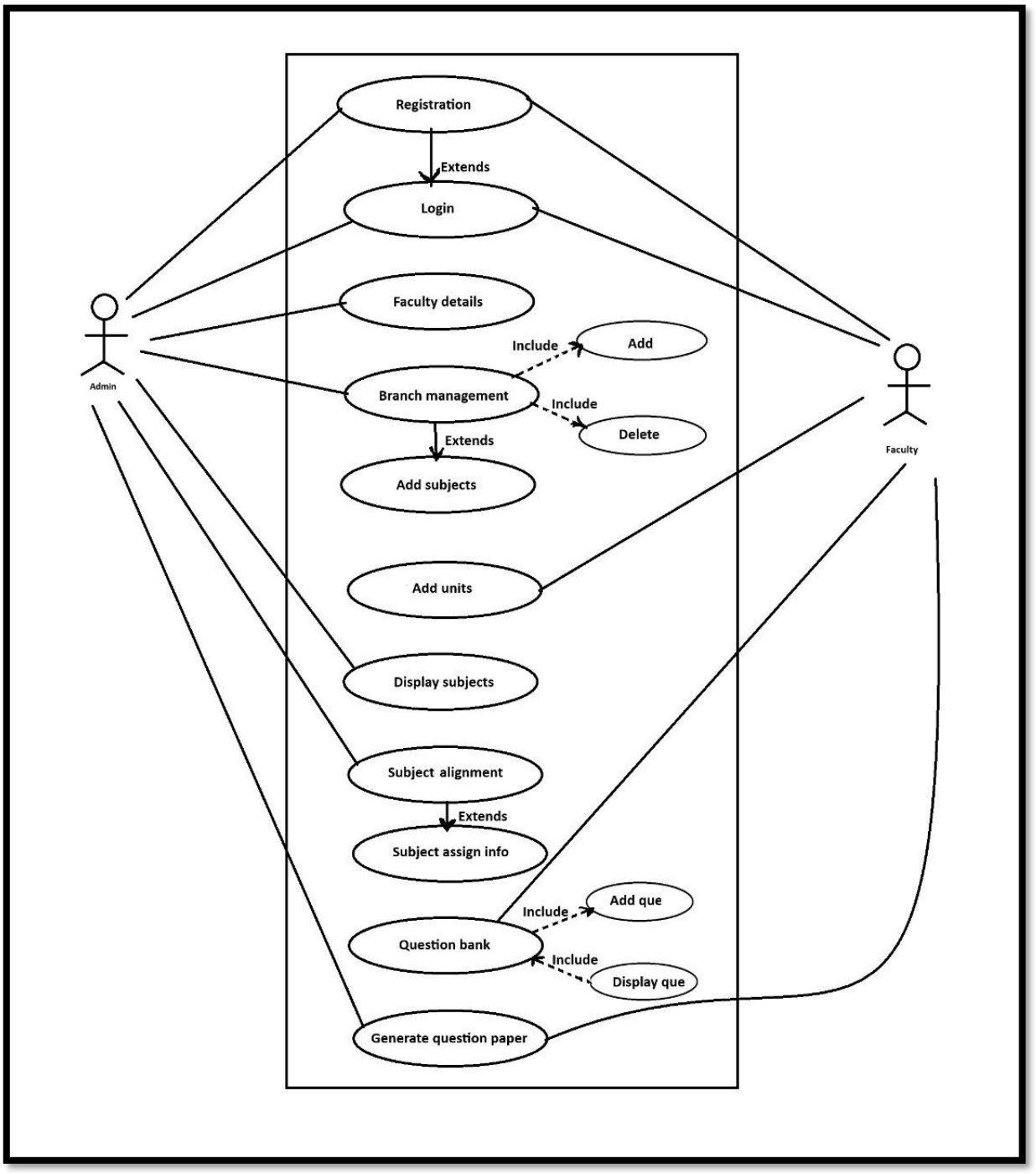
9. SYSTEM DESIGN

9.1 ER diagram



9.1 ER diagram

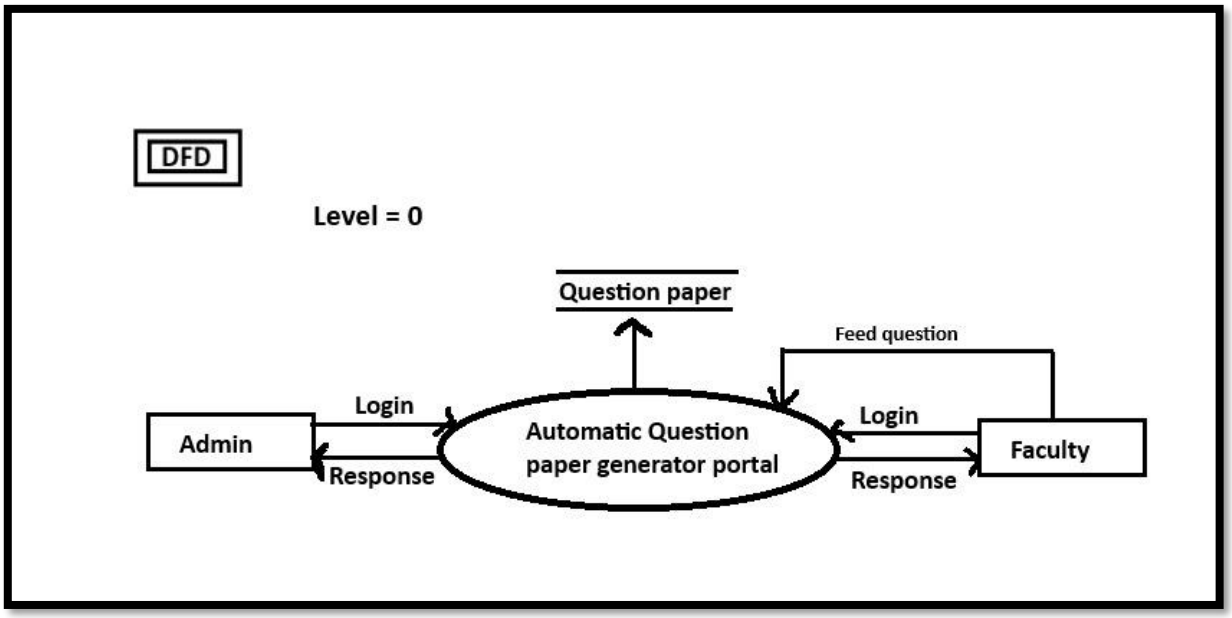
9.2 Use case diagram



9.2 Use case diagram

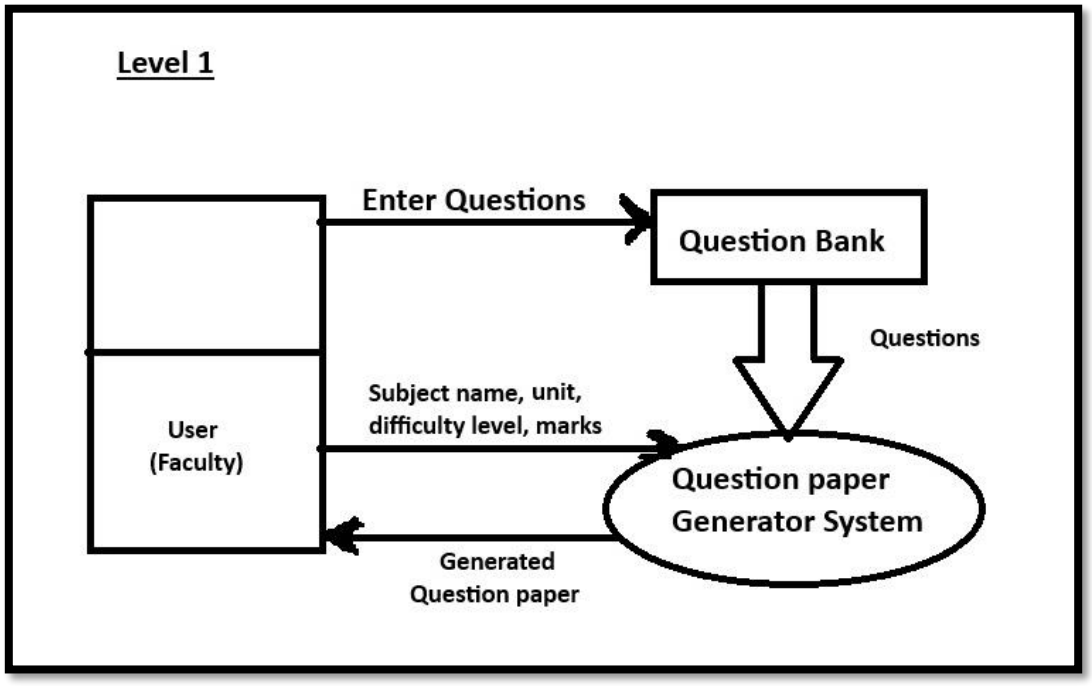
9.3 DFD

9.3.1 Level 0



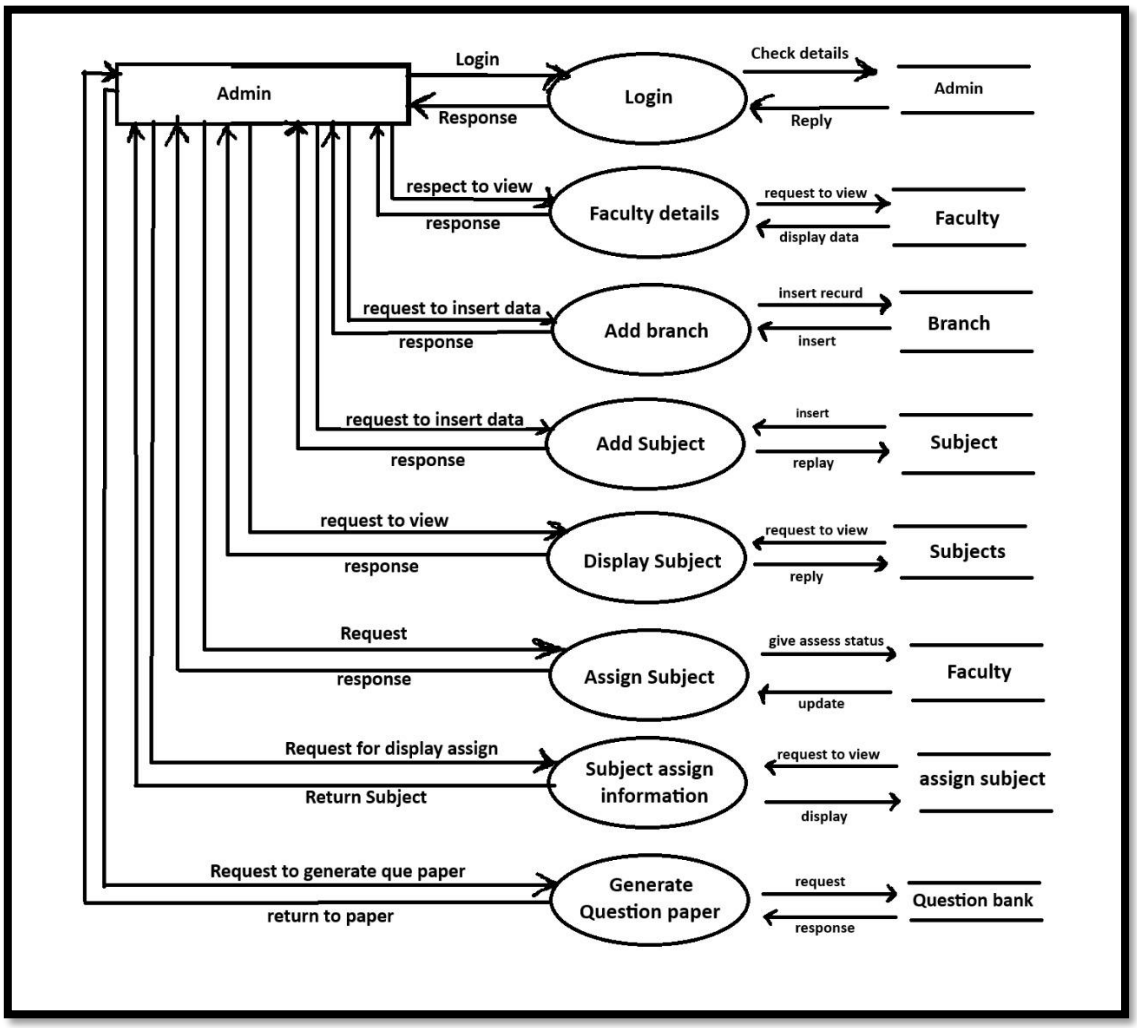
9.3.1 DFD Level 0 – Context level

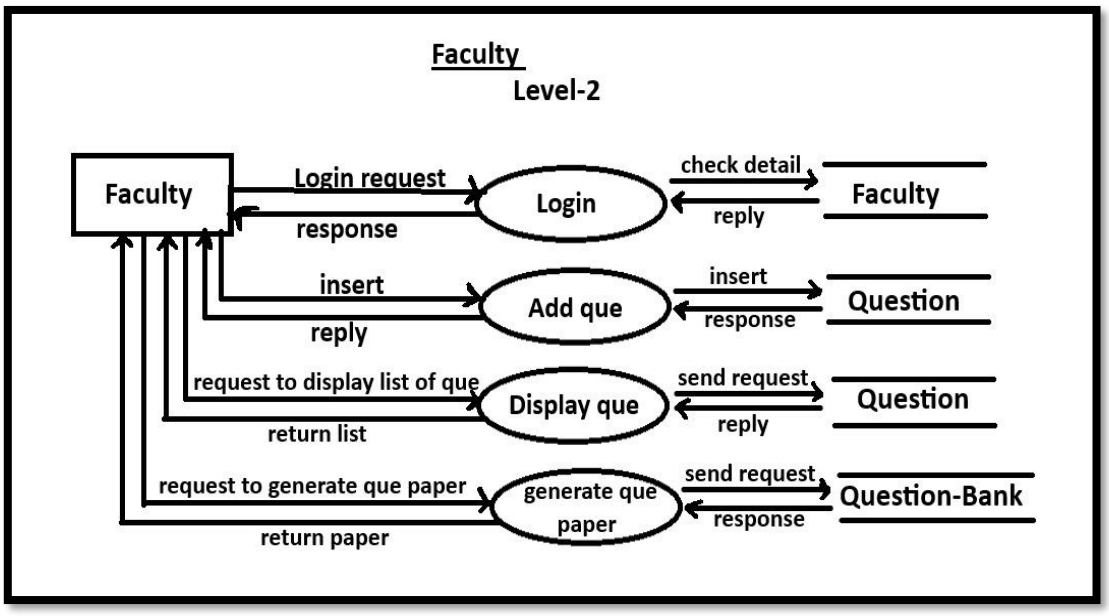
9.3.2 Level 1



9.3.2 DFD level 1

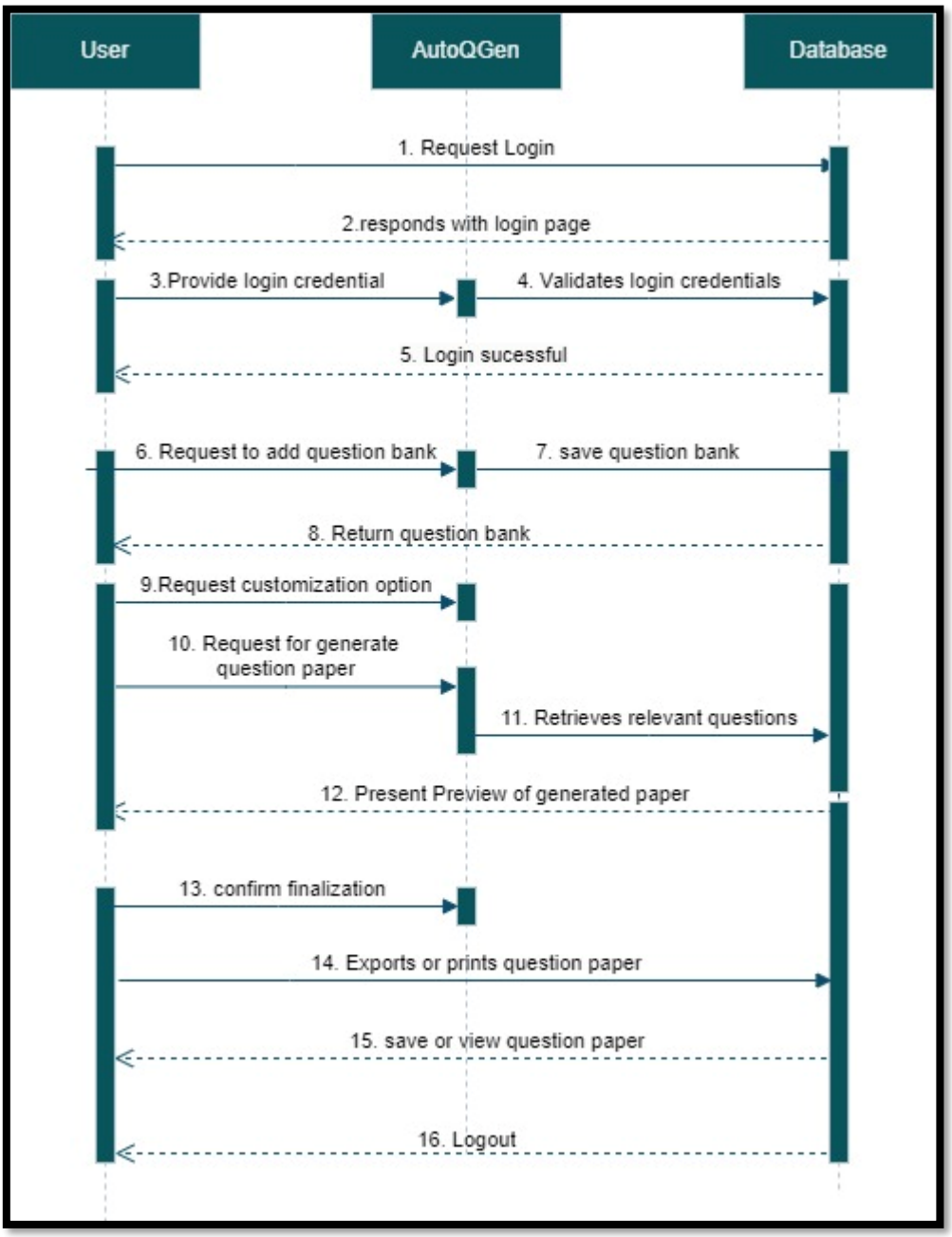
9.3.3 Level 2 (Admin)





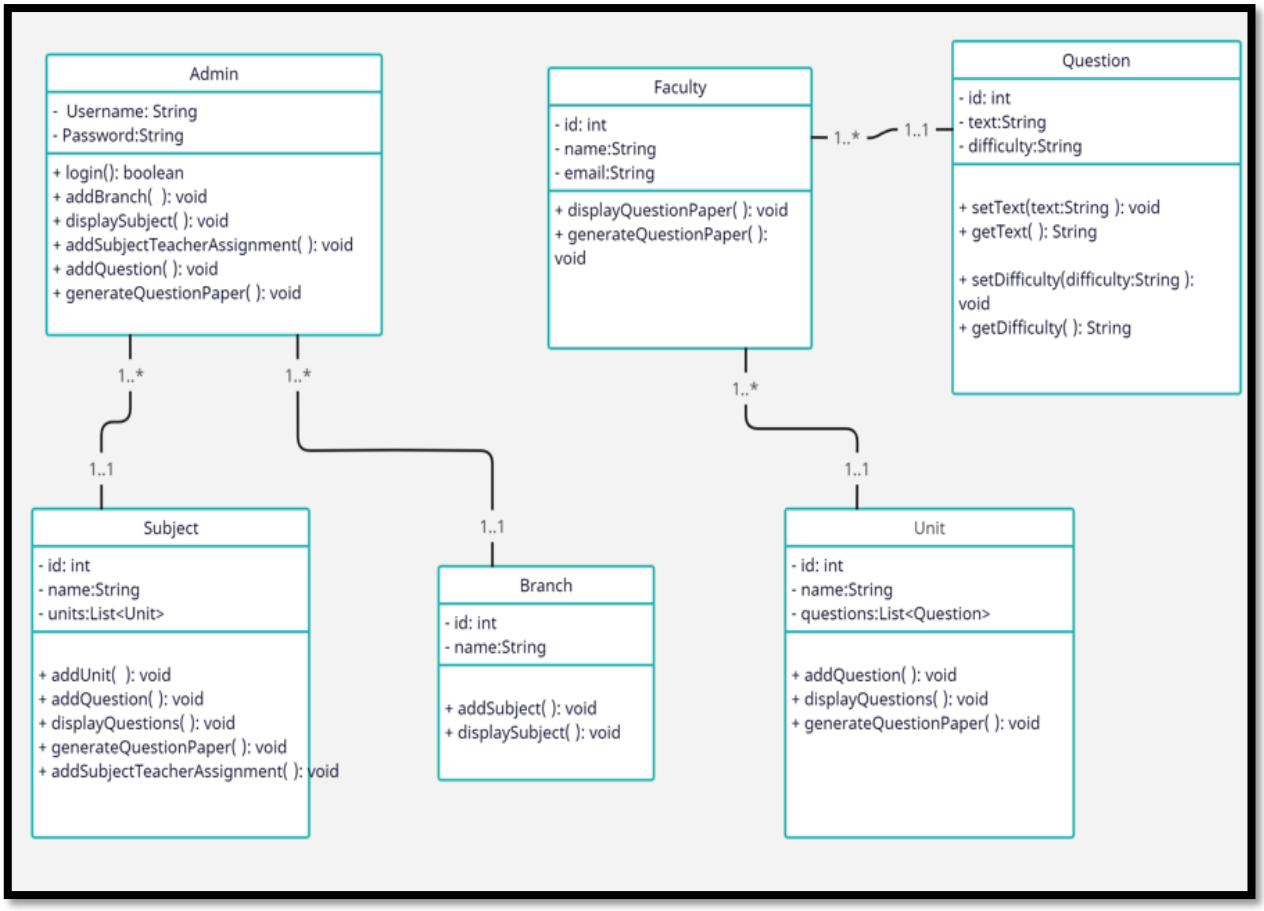
9.3.3 Level 2 (Admin) and 9.3.4 DFD Level 2 (Faculty)

9.1 Sequence diagram



9.4 SEQUENCE DIAGRAM

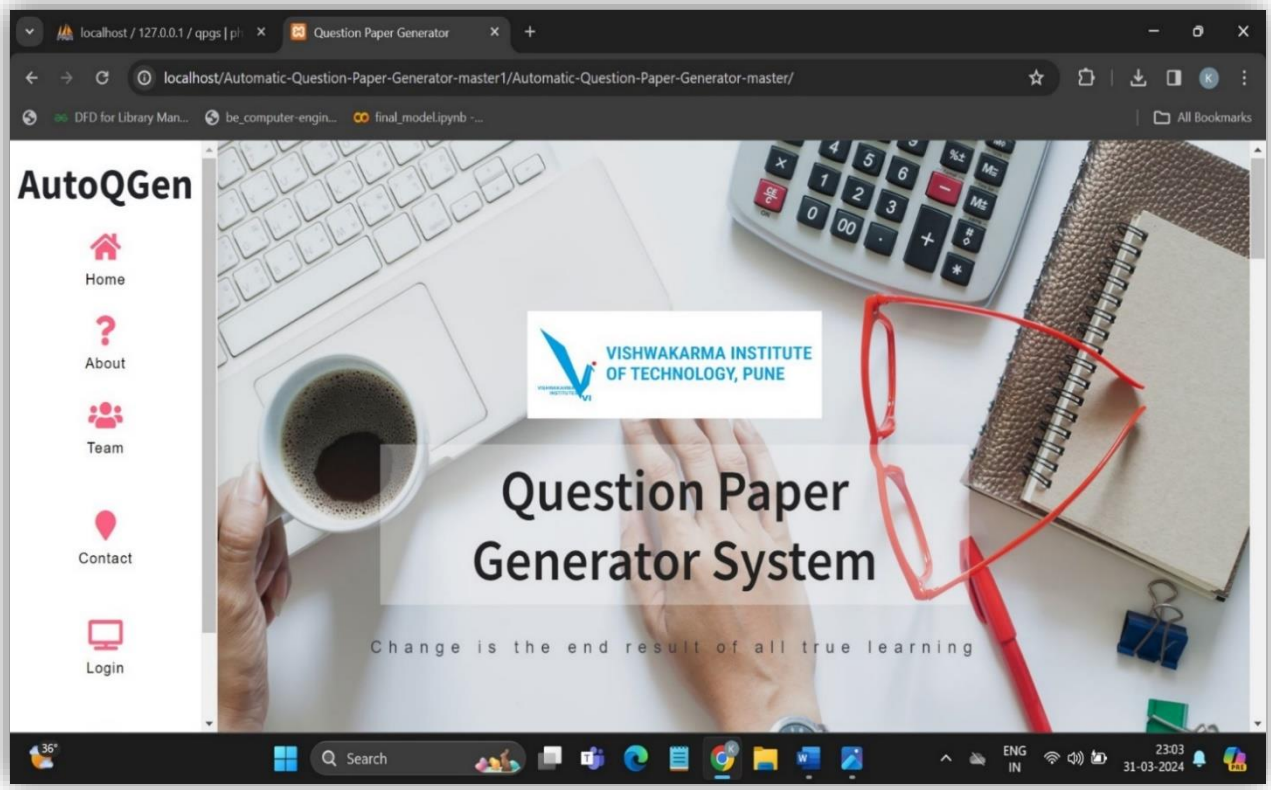
9.2 Class diagram



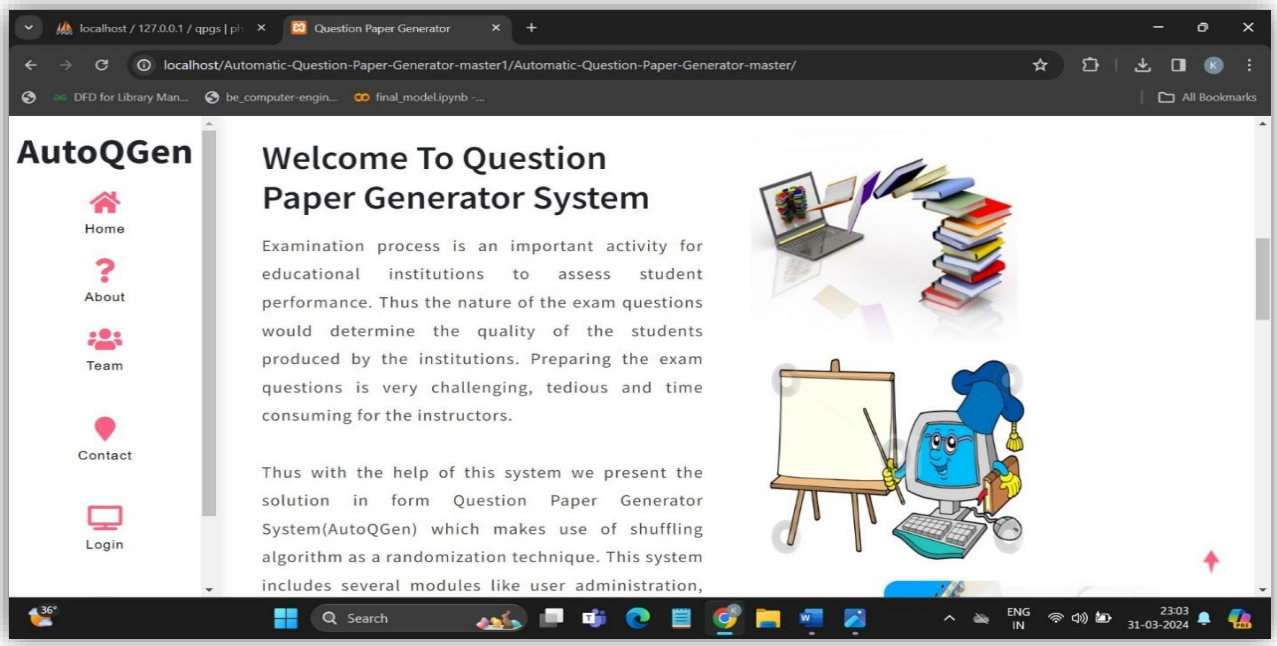
9.5 CLASS DIAGRAM

10. SCREENSHOTS OF GUI

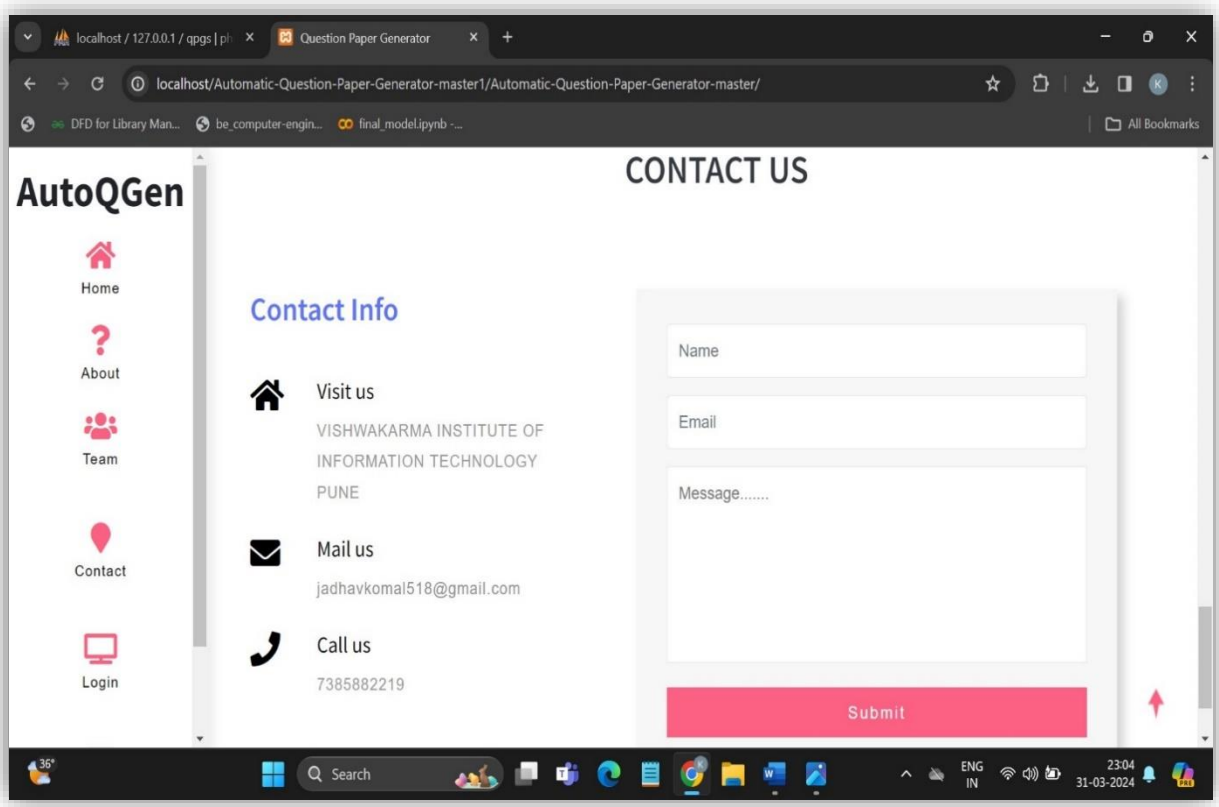
10.1. Home Page :



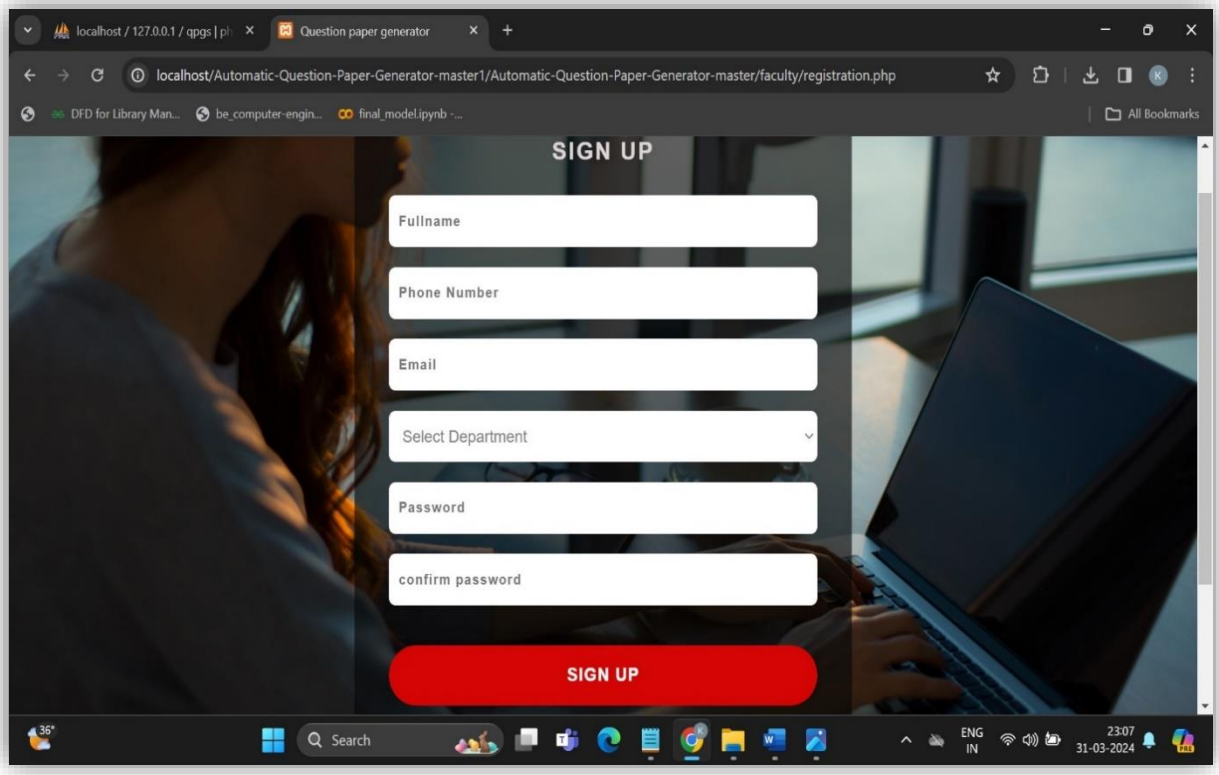
10.2 About Page:



10.3 Contact us Page:

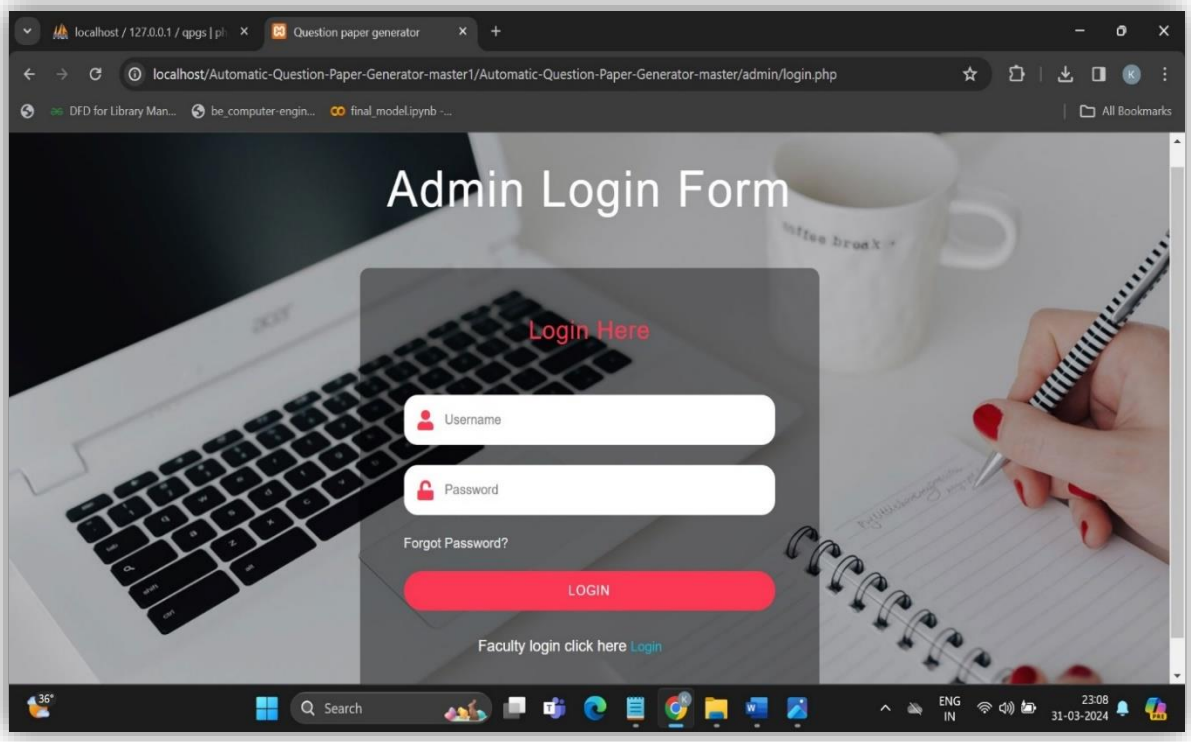


10.4 Registration page:

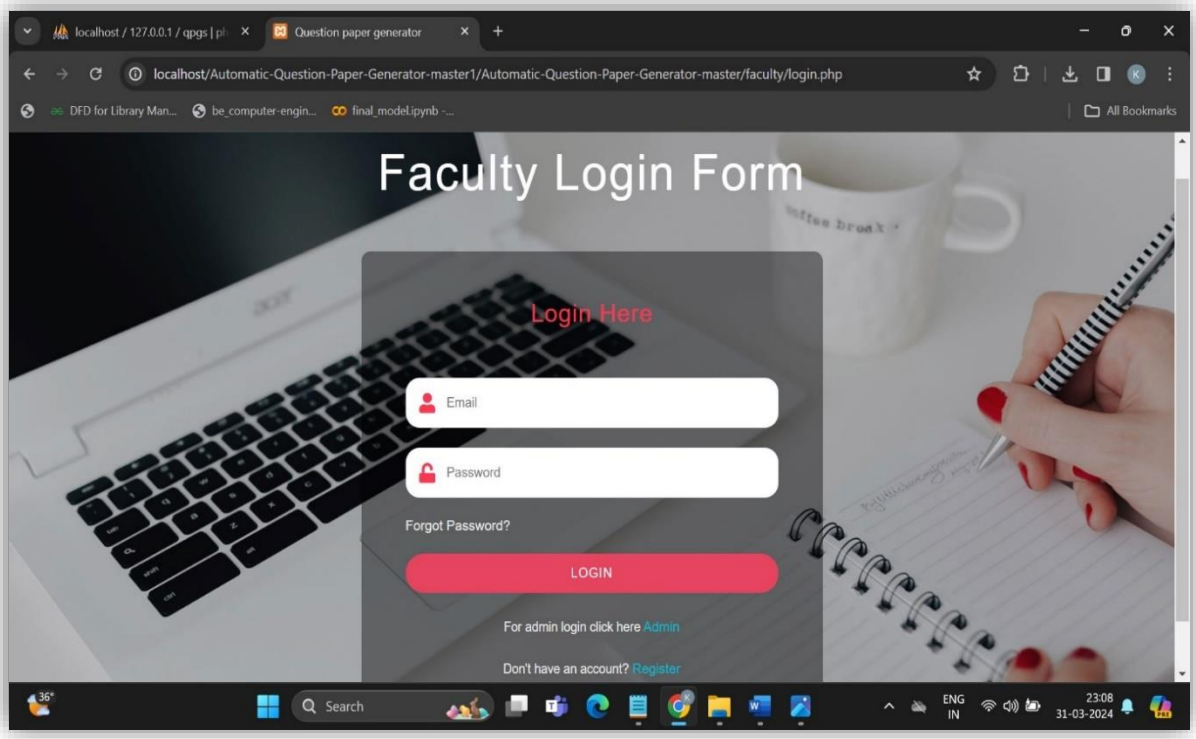


10.5. Login page:

Admin

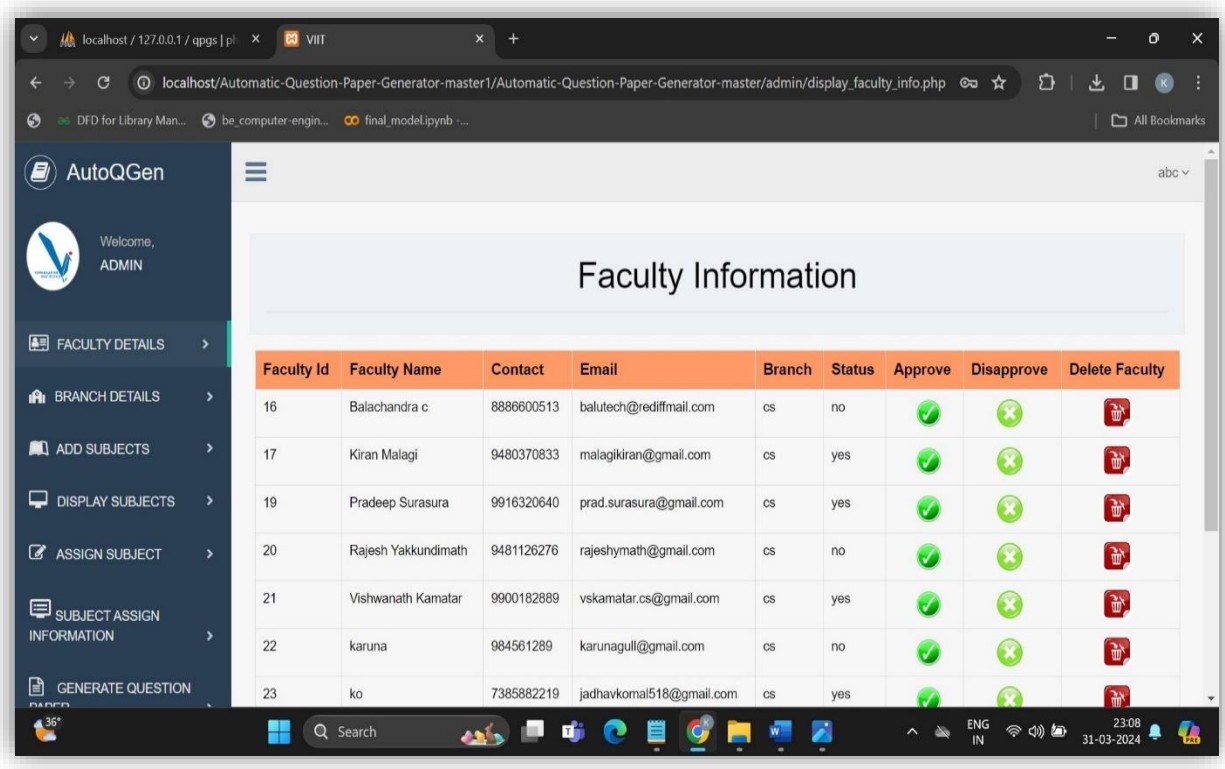


Faculty login:

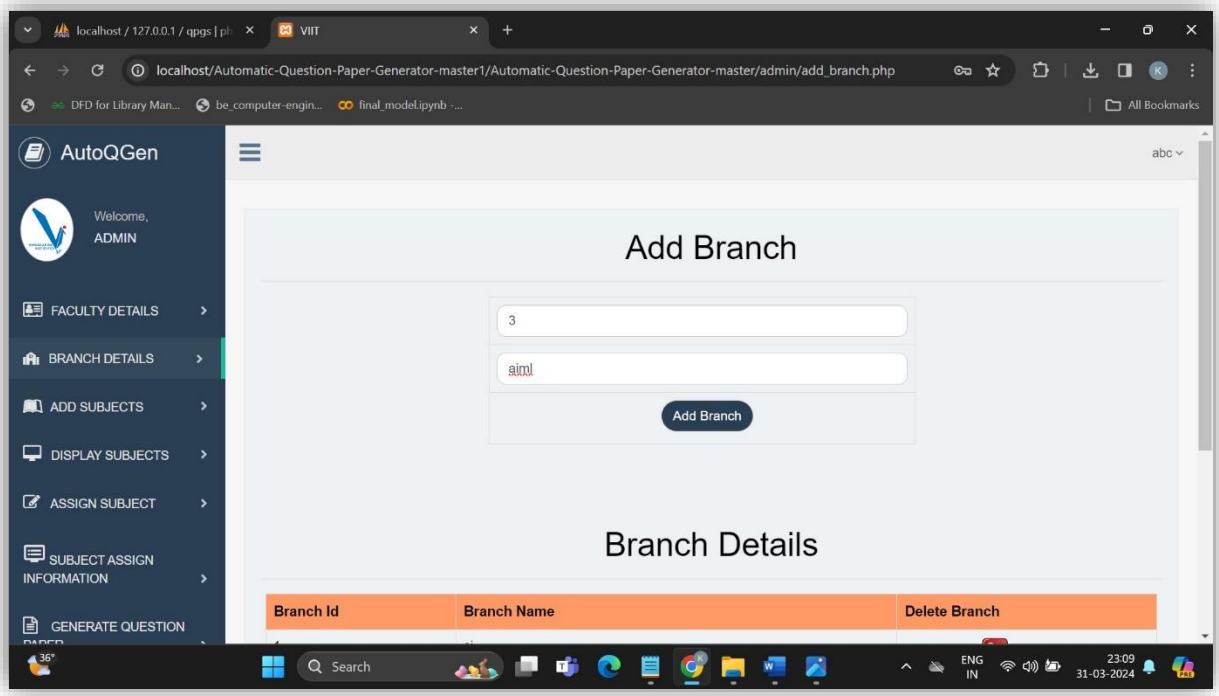


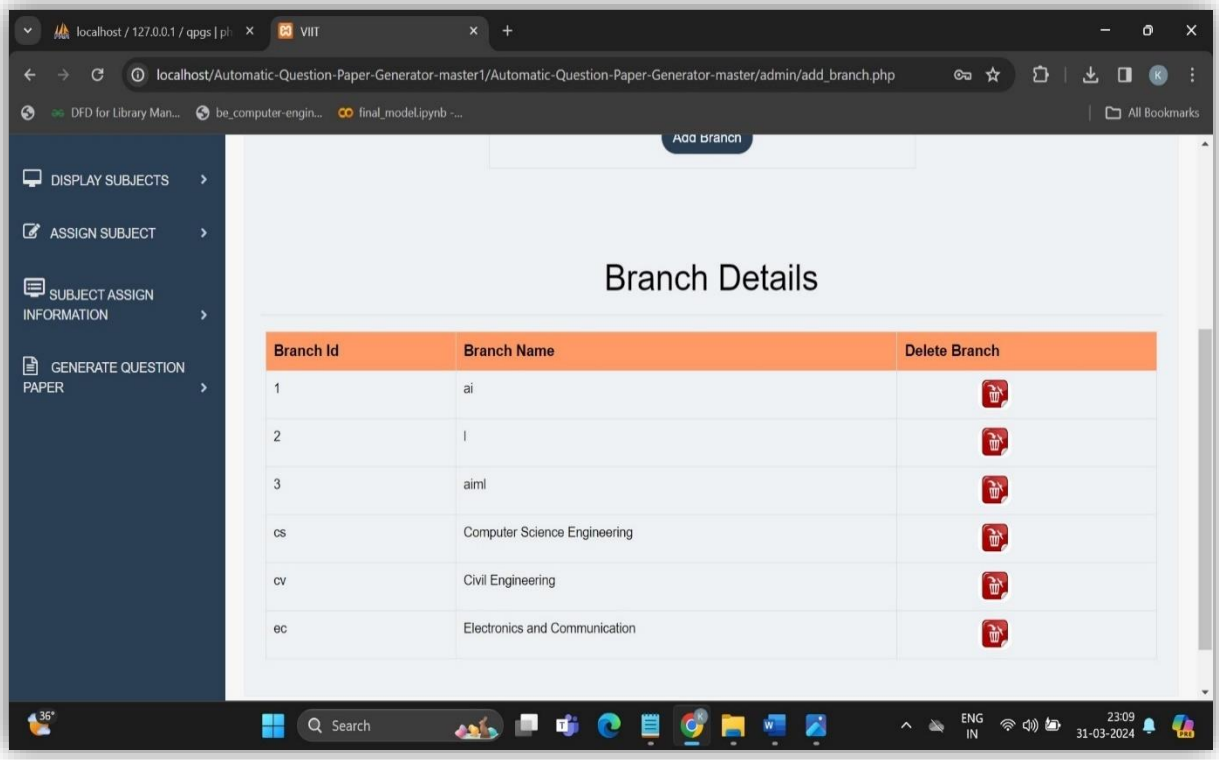
Admin Dashboard:

Faculty Details:

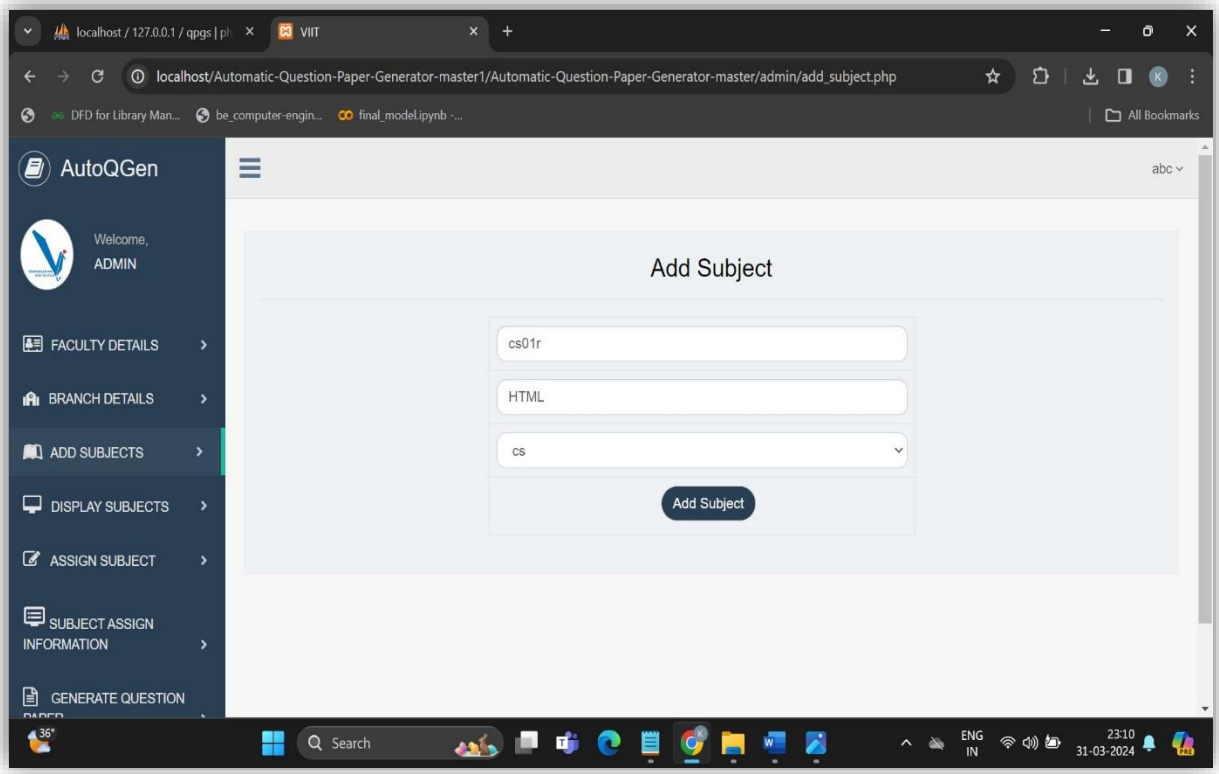


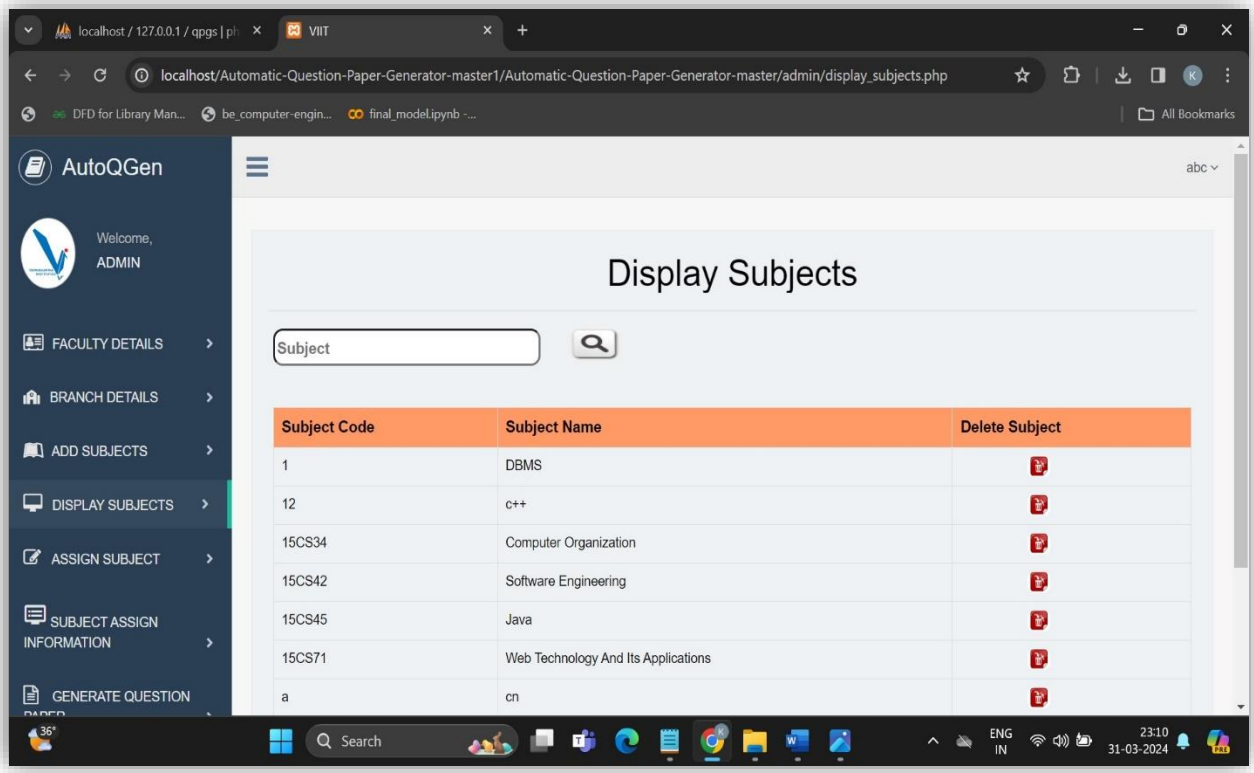
Branch Details:



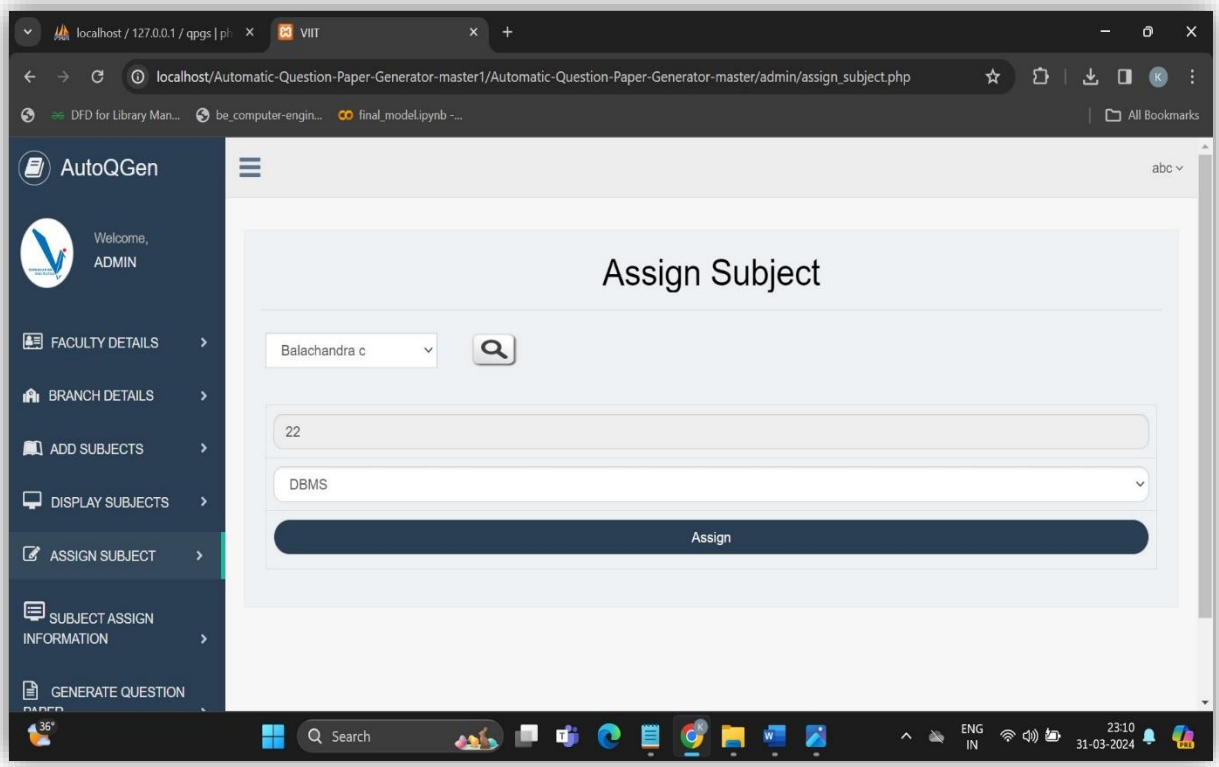


Add subjects:

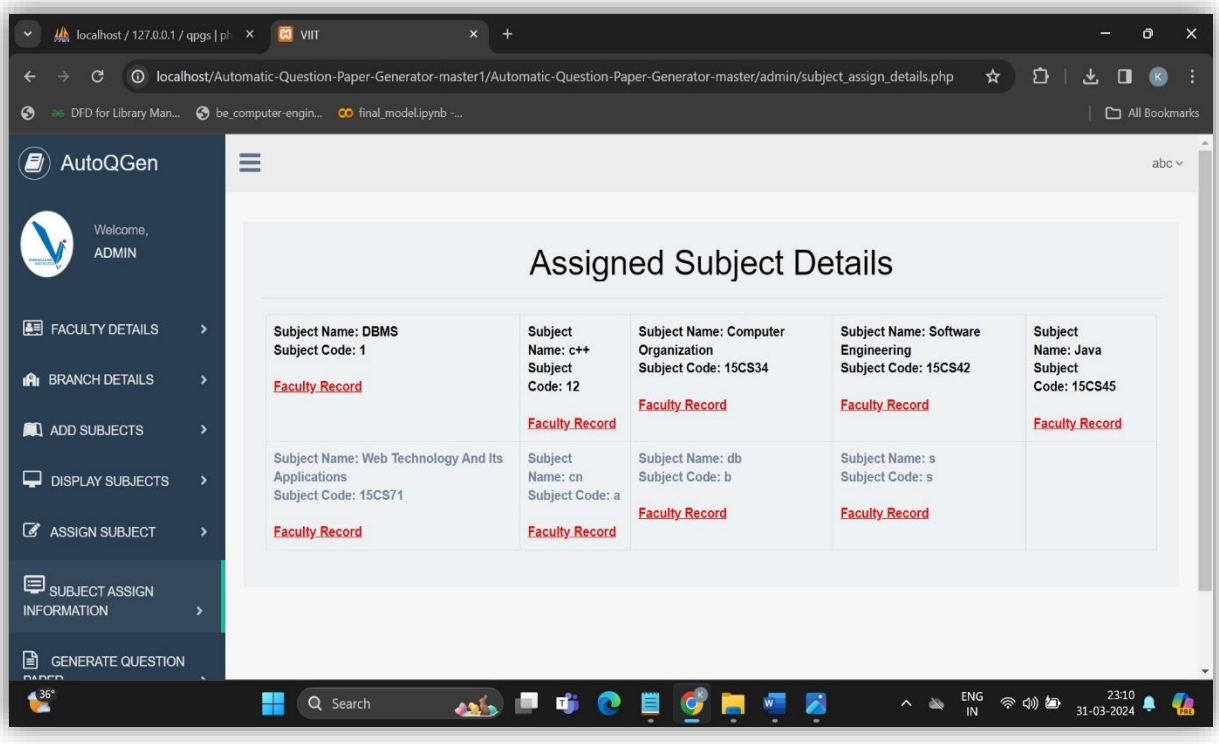

localhost / 127.0.0.1 / qpgs | ph
VIIT
localhost/Automatic-Question-Paper-Generator-master1/Automatic-Question-Paper-Generator-master/admin/add_subject.php
DFD for Library Man...
be_computer-engin...
final_model.ipynb -...
All Bookmarks
AutoQGen
abc
Welcome,
ADMIN
FACULTY DETAILS
BRANCH DETAILS
ADD SUBJECTS
DISPLAY SUBJECTS
ASSIGN SUBJECT
SUBJECT ASSIGN INFORMATION
GENERATE QUESTION
Add Subject
cs01r
HTML
cs
Add Subject
Search
ENG
IN
23:10
31-03-2024

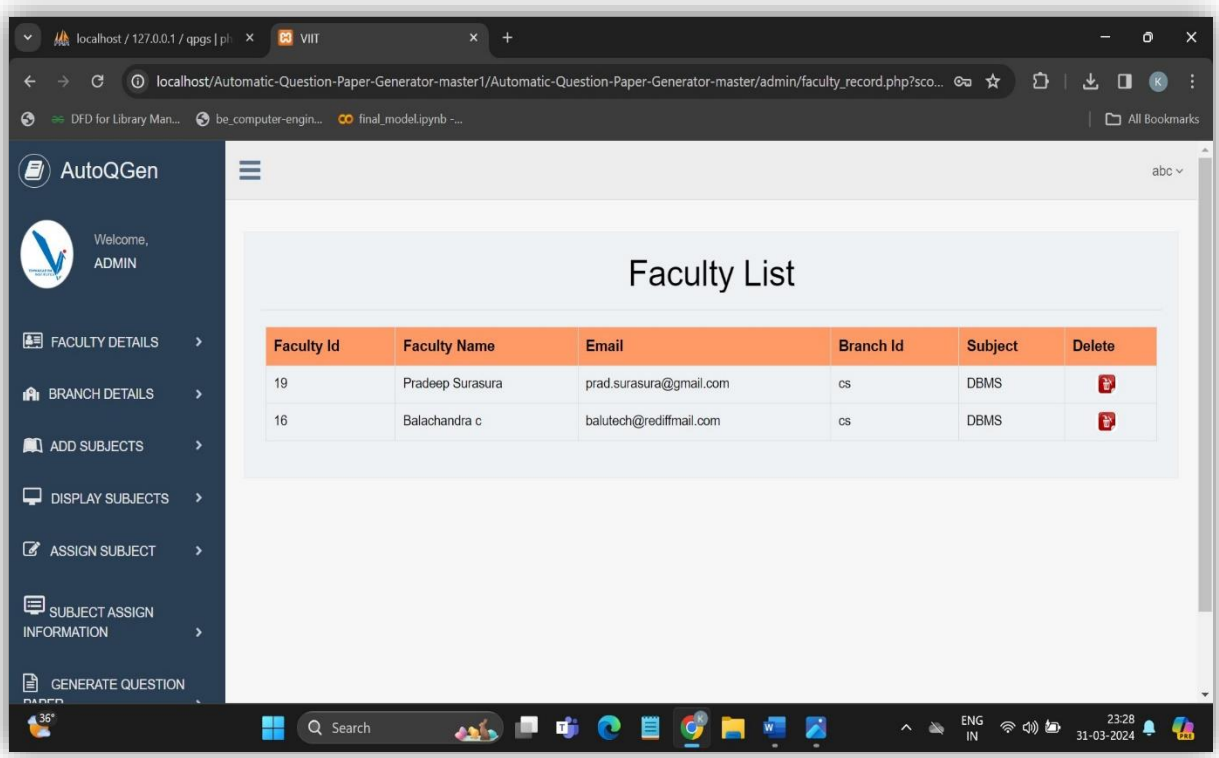

localhost / 127.0.0.1 / qpgs | ph
VIIT
localhost/Automatic-Question-Paper-Generator-master1/Automatic-Question-Paper-Generator-master/admin/display_subjects.php
DFD for Library Man...
be_computer-engin...
final_model.ipynb -...
All Bookmarks
AutoQGen
abc
Welcome,
ADMIN
FACULTY DETAILS
BRANCH DETAILS
ADD SUBJECTS
DISPLAY SUBJECTS
ASSIGN SUBJECT
SUBJECT ASSIGN INFORMATION
GENERATE QUESTION
Display Subjects
Subject
Subject Code
Subject Name
Delete Subject
1
DBMS
12
c++
15CS34
Computer Organization
15CS42
Software Engineering
15CS45
Java
15CS71
Web Technology And Its Applications
a
cn
Search
ENG
IN
23:10
31-03-2024

Assign Subjects:

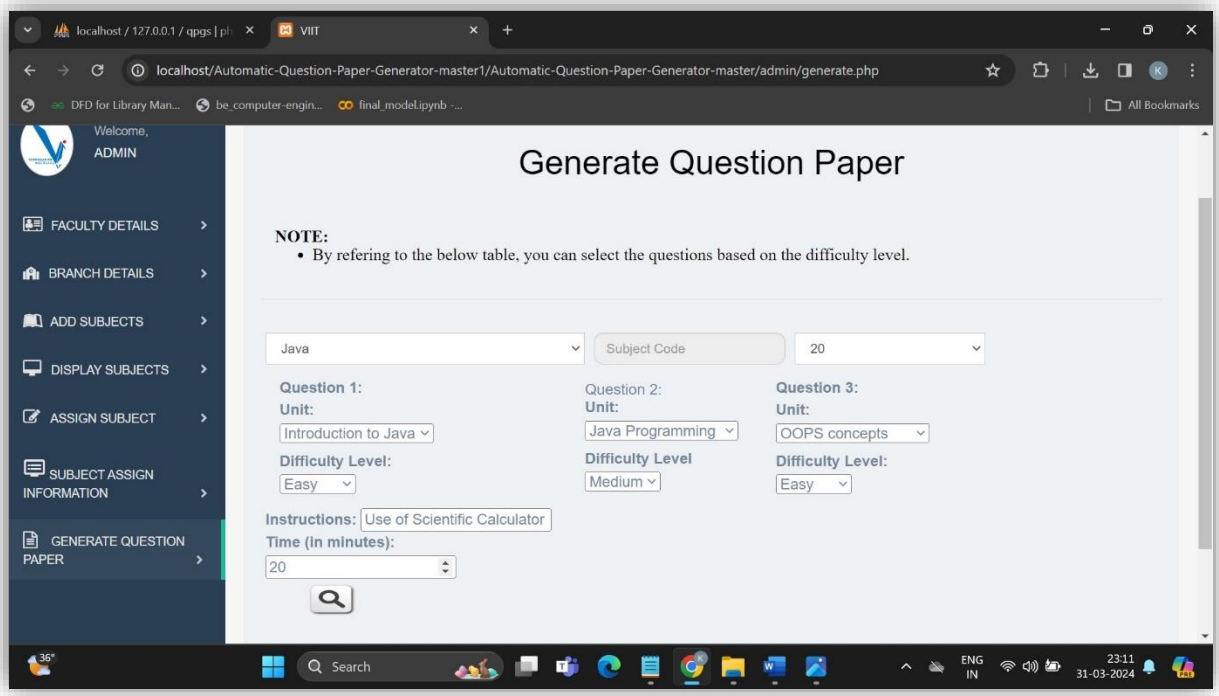


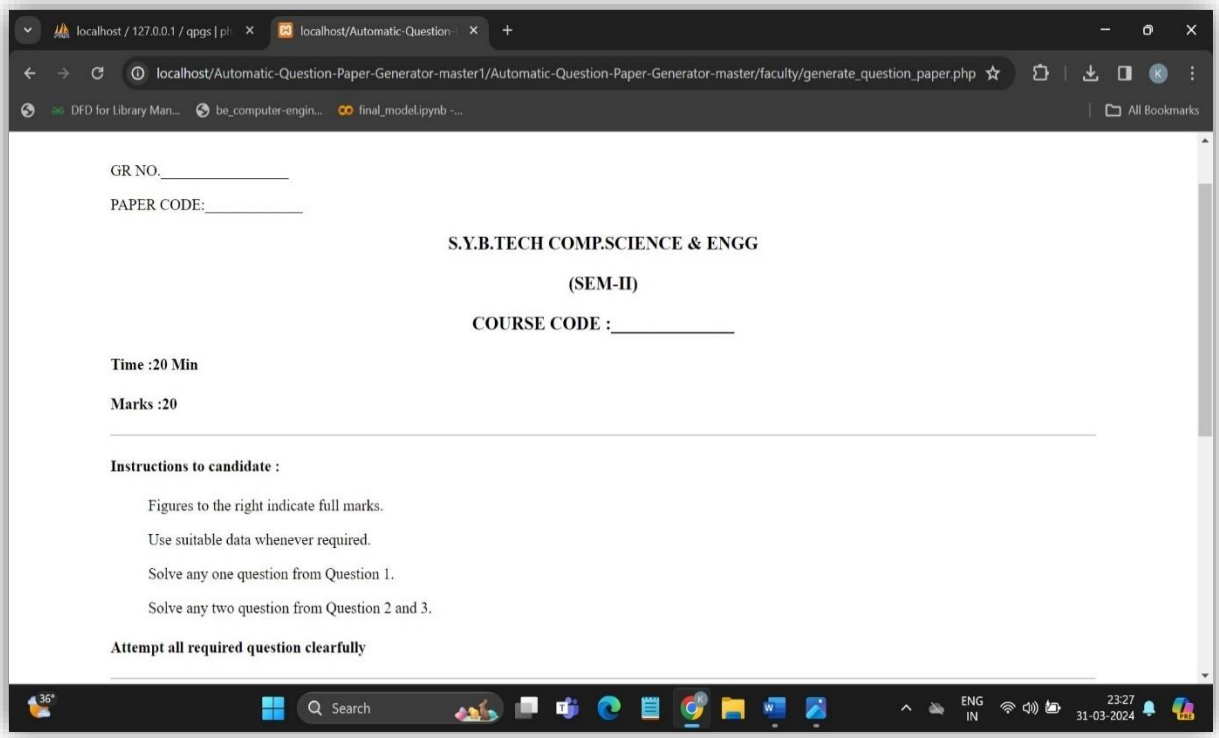
Subject Assign information:

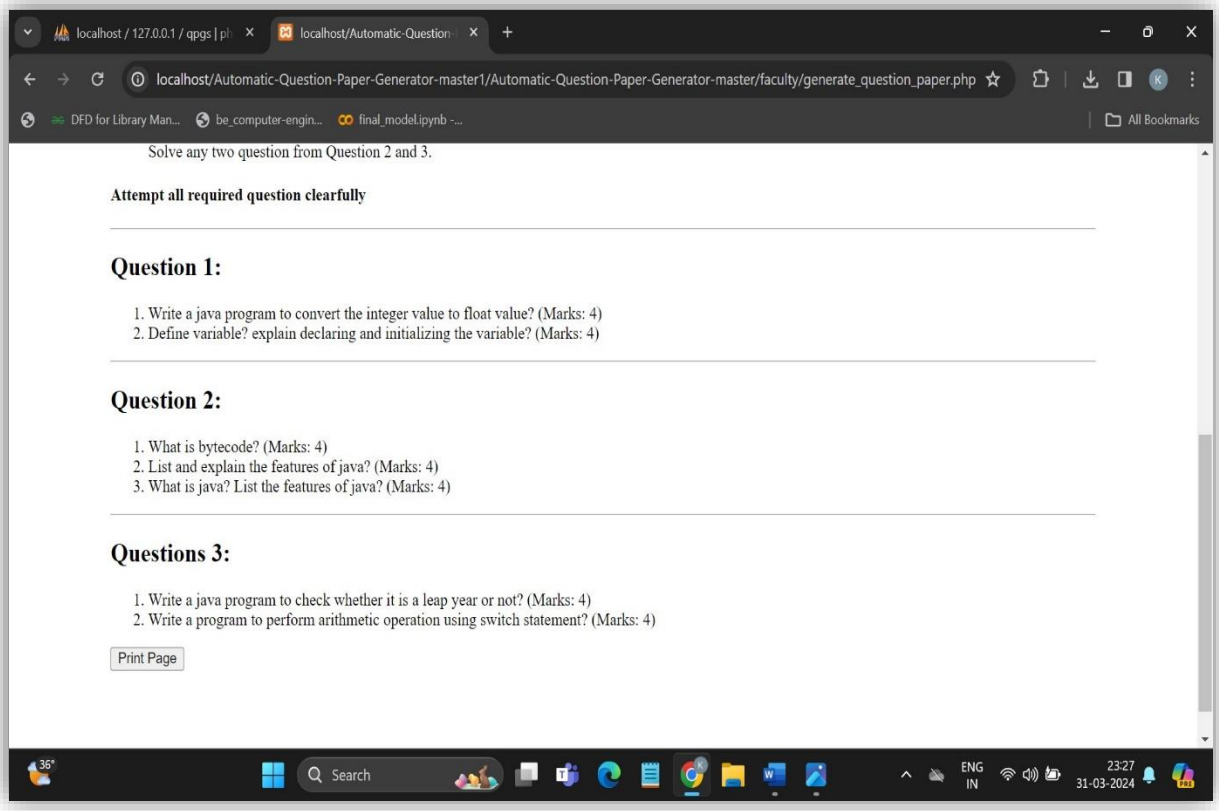




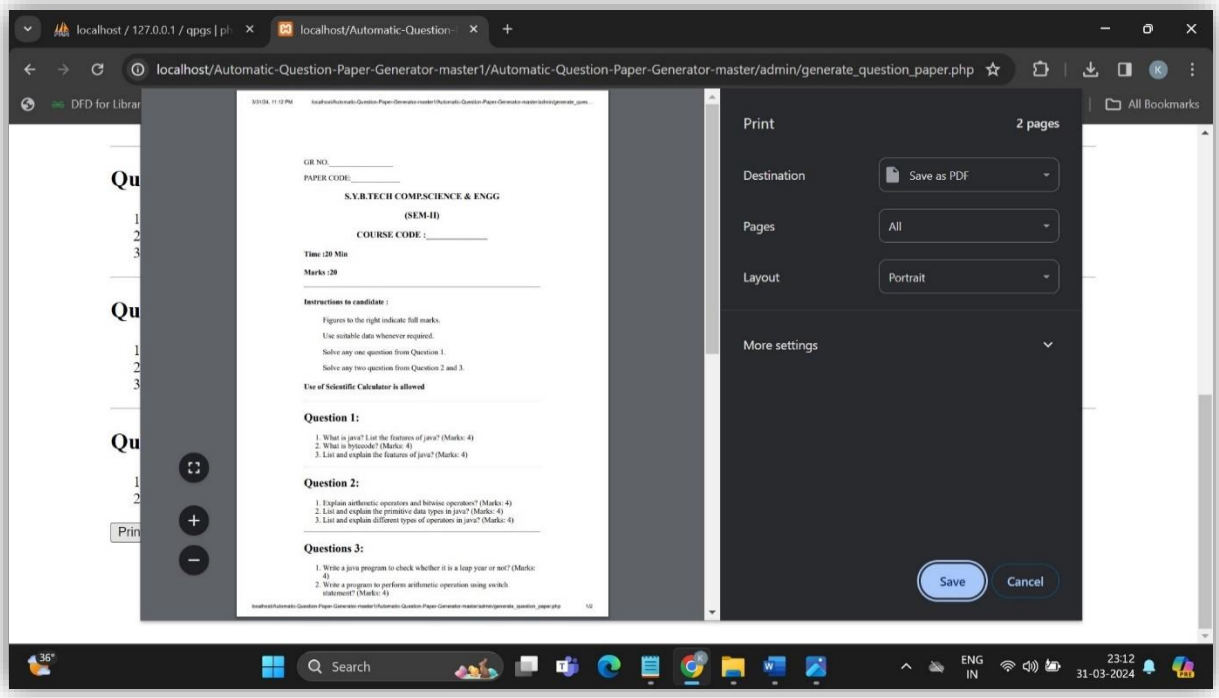
Generate Question Paper:


localhost / 127.0.0.1 / qpgs | ph
VIIT
localhost/Automatic-Question-Paper-Generator-master1/Automatic-Question-Paper-Generator-master/admin/generate.php
DFD for Library Man...
be_computer-engin...
final_model.ipynb -...
All Bookmarks
Welcome,
ADMIN
FACULTY DETAILS
BRANCH DETAILS
ADD SUBJECTS
DISPLAY SUBJECTS
ASSIGN SUBJECT
SUBJECT ASSIGN INFORMATION
GENERATE QUESTION PAPER
Generate Question Paper
NOTE:
By refering to the below table, you can select the questions based on the difficulty level.
Java
Subject Code
20
Question 1:
Unit:
Introduction to Java
Difficulty Level:
Easy
Question 2:
Unit:
Java Programming
Difficulty Level
Medium
Question 3:
Unit:
OOPS concepts
Difficulty Level:
Easy
Instructions:
Use of Scientific Calculator
Time (in minutes):
20
Search
ENG
IN
23:11
31-03-2024


localhost / 127.0.0.1 / qpgs | ph
localhost/Automatic-Question-
localhost/Automatic-Question-Paper-Generator-master1/Automatic-Question-Paper-Generator-master/faculty/generate_question_paper.php
DFD for Library Man...
be_computer-engin...
final_model.ipynb -...
All Bookmarks
GR NO._____
PAPER CODE:_____
S.Y.B.TECH COMP.SCIENCE & ENGG
(SEM-II)
COURSE CODE :_____
Time :20 Min
Marks :20
Instructions to candidate :
Figures to the right indicate full marks.
Use suitable data whenever required.
Solve any one question from Question 1.
Solve any two question from Question 2 and 3.
Attempt all required question clearfully
Search
ENG
IN
23:27
31-03-2024


localhost/Automatic-Question-Paper-Generator-master1/Automatic-Question-Paper-Generator-master/faculty/generate_question_paper.php
Solve any two question from Question 2 and 3.
Attempt all required question clearfully
Question 1:
1. Write a java program to convert the integer value to float value? (Marks: 4)
2. Define variable? explain declaring and initializing the variable? (Marks: 4)
Question 2:
1. What is bytecode? (Marks: 4)
2. List and explain the features of java? (Marks: 4)
3. What is java? List the features of java? (Marks: 4)
Questions 3:
1. Write a java program to check whether it is a leap year or not? (Marks: 4)
2. Write a program to perform arithmetic operation using switch statement? (Marks: 4)
Print Page

Print:


localhost/Automatic-Question-Paper-Generator-master1/Automatic-Question-Paper-Generator-master/admin/generate_question_paper.php
S.Y.B.TECH COMP.SCIENCE & ENGG
(SEM-II)
COURSE CODE :
Time :20 Min
Marks :20
Instructions to candidate :
Figures to the right indicate full marks.
Use suitable data whenever required.
Solve any one question from Question 1.
Solve any two question from Question 2 and 3.
Use of Scientific Calculator is allowed
Question 1:
Question 2:
Questions 3:
Print
2 pages
Destination
Save as PDF
Pages
All
Layout
Portrait
More settings
Save
Cancel

11. CONCLUSION

The development of our automatic question paper generator web app marks a significant stride in the realm of educational technology. Leveraging HTML, CSS, and JavaScript, we've crafted a seamless and user-friendly interface that empowers educators to effortlessly generate custom question papers tailored to their specific needs. By automating this traditionally time-consuming task, we not only enhance the efficiency of educators but also free up valuable time for them to focus on other critical aspects of teaching. Our web app's responsive design ensures accessibility across devices, further increasing its utility and convenience for educators in various educational settings. Moving forward, we envision further refinement and expansion of the app's features to meet the evolving needs of educators and learners, solidifying its position as a valuable tool in the modern educational landscape.

Our automatic question paper generator web app represents a tangible solution to the challenges educators face in creating tailored assessments. By harnessing the capabilities of web technologies, we've provided educators with a powerful tool to streamline their workflow and improve the overall quality of assessment practices. As we continue to iterate and enhance the app, we remain committed to fostering innovation in education and empowering educators with the tools they need to facilitate meaningful learning experiences for their students.

12.REFERENCES

1. SDLC - Waterfall model and agile URL:
   https://www.tutorialspoint.com/sdlc/sdlc_waterfall_model.htm

2. Agile and Waterfall – Benefits of Blending the Two URL:
   https://cemsolutions.org/benefits-of-blending-agile-and-waterfall/

3. HTML History URL:
   https://www.w3schools.in/html-tutorial/history

4. JavaScript History URL:
   https://www.w3schools.com/js/js_history.asp

5. Visual studio information URL:

   https://www.geeksforgreeks.org/Introduction-to-visual-studio/

6. Mysql tutorial
   https://www.w3schools.com/MySQL/default.asp

7. Web technology
   https://www.geeksforgeeks.org/web-technology/